

REMARKS

Reconsideration and allowance are respectfully requested.

Claims 68, 72 and 76-114 are pending. The scope of the claimed invention is not changed because the claim amendments correct informalities that by their nature (e.g., corrections of typographical errors and antecedent basis) clarify and do not limit the originally intended scope of protection. Upon allowance of the product claims from which they depend, rejoinder of claims 96 and 113 (i.e., processes of making and using the product of claim 68) is requested.

Applicants appreciate the Examiner's courtesy in granting the interview of March 30, 2006. This application has been transferred to another law firm since the interview was conducted and a statement of the substance of the interview is provided in our comments on the Section 103(a) rejection. It appears that such statement complies with the requirement set forth in the Interview Summary but, if it is deficient in any way, please advise in the next Office communication so the record can be completed.

35 U.S.C. 112 – Definiteness

Claims 68, 72, 76-80 and 83-95 were rejected under Section 112, second paragraph, as being allegedly "indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." Applicants traverse.

The Office objected to the phrase "granular particles of the extruded microorganisms" as allegedly lacking antecedent basis. The phrase "granular particles" is recited in claim 68 to distinguish the particles of the extruded microorganisms that were subject to drying from the dried granules. See claim 96 which recites that biomass is extruded into granular particles, and then the granular particles are dried to give dried granules. Applicants do not refer to the granular particles in claim 68 and, thus, the phrase "granular particles of the extruded microorganisms" has proper antecedent basis.

Applicants request withdrawal of the Section 112, second paragraph, rejection because the pending claims are clear and definite.

35 U.S.C. 103 – Nonobviousness

To establish a case of prima facie obviousness, all of the claim limitations must be taught or suggested by the prior art. See M.P.E.P. § 2143.03. Obviousness can only be established by combining or modifying the prior art teachings to produce the claimed invention if there is some teaching, suggestion, or motivation to do so found in either the references themselves or in the knowledge generally available to a person of ordinary skill in the art. See, e.g., *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Jones*, 21 USPQ2d 1941, 1943-44 (Fed. Cir. 1992). Evidence of the teaching, suggestion or motivation to combine or to modify references may come explicitly from statements in the prior art, the knowledge of a person of ordinary skill in the art or the nature of the problem to be solved, or may be implicit from the prior art as a whole rather than expressly stated in a reference. See *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999); *In re Kotzab*, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000). Rigorous application of this requirement is the best defense against the subtle, but powerful, attraction of an obviousness analysis based on hindsight. See *Dembiczak* at 1617. Whether shown explicitly or implicitly, however, broad conclusory statements standing alone are not evidence because the showing must be clear and particular. See *id.* Finally, a determination of prima facie obviousness requires a reasonable expectation of success. See *In re Rinehart*, 189 USPQ 143, 148 (C.C.P.A. 1976).

Claims 68, 72, 76-80, 83-95 and 114-115 were rejected under Section 103(a) as allegedly unpatentable over Akimoto et al. (U.S. Patent 4,916,066) taken with Barclay (U.S. Patent 5,656,319) and Huang et al. (U.S. Patent 4,056,638). Applicants traverse.

With regard to the obviousness rejection, the Office has not established all of the elements of the claimed invention: i.e., none of the cited references disclose granules having a diameter between 0.1 to 12 mm as recited in claim 68. The Office alleged that the “sizing discussed in the references appear to be substantially the same as claimed” but the size of granules was not disclosed in the cited references at all. Furthermore, the cited references do not indicate what result can be achieved by obtaining granules having the claimed size. The Office appears to acknowledge this deficiency of the cited references by stating, “It is not readily apparent that the size limitation is critical for the

properties of the product as touted.” But Applicants teach in the paragraphs bridging pages 6-7 and bridging pages 13-14 of their specification that the particles should not be too small or too large: too small particles clog filters during extraction processes, and too large particles will have insufficient surface area. Thus, impeding solvent penetration during extraction processes is a problem avoided by the claimed invention and that solution is not taught or suggested by the cited references, which do not disclose optimizing the size to achieve this result or any other result. Applicants respectfully request the Office to indicate what result can be achieved by optimizing the size of the particles in the cited references, and where that result is disclosed in the cited references. The Barclay and Huang references describe the use of their compositions for feed, but this does not require the specific range of sizes as recited in the claims. In a separate discussion, the Office alleged that the intended use of the extruded composition for animal feed in Barclay and Huang is not seen as preventing its use for the extraction of oil, and that the intended use “must create a structural difference between the claimed composition and the prior art composition.” Applicants submit, however, that the structural difference between the claimed invention and the cited references is, in at least one aspect, the size of the granules. Without the disclosure of granule size as claimed, and without any mention of size being a result effective parameter, the Office has not established that this claim limitation would have been obvious and, therefore, has not established *prima facie* obviousness.

Furthermore, the Office has not established that the cited references disclose the porosity as defined in dependent claims 91-93. The Office alleged that this degree of porosity “would reasonably have been expected.” But to establish that such porosity is an inherent property, the Office is required to provide evidence that the claimed porosity is necessarily present in the cited references. Such a showing has not been made.

Applicants respectfully disagree with the Office’s characterization of Example 25. Example 25 shows unexpected results, although the Office appears to suggest that the product has not been extruded. Applicants teach on page 43, line 16, and page 44, lines 4 and 27, of their specification that the biomass indeed was extruded. Thus, Applicants respectfully request the Office to reconsider the advantageous results of the invention.

Moreover, the Office has not established a reasonable expectation of success. The Office appears to suggest that a combination of the cited references would be successful due to “the expected economic benefits of obtaining a dried stable microbial product that is easy to manipulate and a cost of which is reduced.” Applicants respectfully submit, however, that the purported expectation of success is not directed to the granules as claimed. The Office has not indicated, for example, that obtaining granules of the recited range of sizes would be expected to be successful, particularly because none of the cited references discloses a granule of the claimed diameter. Such granules have enhanced extractability and there is no expectation in any of the cited references that such enhanced extractability can be successfully achieved.

To clarify the record, Applicants address the Office’s other allegations below.

The Office erred in its characterization of the Barclay reference. Specifically, the Office alleged that Barclay recognizes that any oil available from fungal mycelia would be more readily extractable upon extruding. But Barclay only mentions extrusion with respect to the particular microorganisms which comprise the invention and has not suggested that extrusion will make any oil readily extractable. In particular, Barclay in the first paragraph under “Brief Summary of the Invention” states,

“The present invention is directed toward a food product...which includes microorganisms characterized by having a high concentration of fatty acids, of which a high percentage are omega-3 highly unsaturated fatty acids.”

In contrast, Barclay discloses that *Mortierella* produce ω -3 high unsaturated fatty acids but “they comprise only a very small fraction of the total fatty acid in the cells.” Thus, *Mortierella* would not be included in the microorganisms of Barclay’s invention. Barclay also specifically names *Thraustochytriales* as the microorganisms having such characteristics. In contrast to the Office’s assertion, Barclay does not recognize that any oil available in fungal mycelia would be more readily extractable upon extruding and by his choice of microorganism teaches away from the claimed invention.

The Office also alleged that there is nothing in the record that suggests that “the order of extruding and drying affects the product made.” Applicants have previously noted, however, in the paragraph bridging pages 12-13 of the response filed February

23, 2006, that drying an extrudate can minimize deterioration of the compound to be extracted. Thus, the composition as claimed is capable of being formed with decreased deterioration of PUFA. Moreover, granulating the biomass (before drying) minimizes the destruction of the cells as described on page 6, lines 10-17, of the specification. Thus, the order of the extruding and drying indeed affects the product made.

Withdrawal of the Section 103 rejection is requested because the invention as claimed would not have been obvious to one of ordinary skill in the art at the time it was made.

Conclusion

Having fully responded to all of the pending objections and rejections contained in this Office Action, Applicants submit that the claims are in condition for allowance and earnestly solicit an early Notice to that effect. The Examiner is invited to contact the undersigned if any further information is required.

Respectfully submitted,

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